

**A critical appraisal of “Dry needling versus friction massage to treat  
tension type headache: A randomized clinical trial”**

**By**

**Emma Johnson, SPT**

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**Department of Physical Therapy**

**Angelo State University**

**Member, Texas Tech University System**

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## **Abstract**

This appraisal was conducted to answer the clinical question “is dry needling an effective treatment for reducing the frequency of cervicogenic headaches in young adults”. The study “Dry needling versus friction massage to treat tension type headache: A randomized clinical trial” by Kamali et al explored and compared the effectiveness of both dry needling and friction massage. This study showed that both modalities are equally effective for cervicogenic headaches, which allows clinicians to be able to choose which modality to use when treating patients with this condition. While there were some drawbacks to this study, such as the lack of explanation of the modalities in the introduction or the relatively small and not diverse sample size, the results of the study still showed that the treatments were effective, and using either method should produce similar results for other clinicians regardless of the modality chosen.

## **Key words**

Dry needling, cervicogenic, tension, headache

## **Introduction**

Cervicogenic headaches are tension headaches from the upper posterior neck that are common among adults who spend their work day sitting at a desk looking at a computer, or in those individuals with poor cervical posture. With the society moving towards a digital age and more people spending all day at a desk on a computer, one could assume that this condition could become increasingly more common. Dry needling is a common modality for relieving tension from muscles and allowing the patient to relax. This begs the question, is dry needling an effective treatment in reducing the frequency of cervicogenic headaches in young adults?

## **Methods**

For the literature search, PubMed was the database which gave the most relevant results to the clinical question. However, since many of the articles were not available for free download on PubMed directly, ScienceDirect through the Angelo State library databases was the main source of download once articles were identified as relevant. The search terms that produces the most relevant results were “dry needling and headaches”. With this search, only thirty-two results were found before any exclusions were made. Since the question is experimental in nature, all systematic reviews and meta-analyses were excluded. The only articles that were considered were randomized clinical trials. The search was also limited to only English for ease of reading. With these criteria, only five results remained to be considered.

The article that was chosen is published in the Journal of Bodywork & Movement Therapies. The study was conducted by the Student Research Committee in the Department of Physical Therapy at Shiraz University of Medical Sciences in Iran. The study took place in 2017, and was later published in 2019. This specific article was chosen because it was most relevant to the clinical question as compared to the other articles that were available and offered a second modality as an option for treating the condition in question.

## **Results**

### Summary of the study

The focus of this study was to compare the effects of dry needling versus friction massage on cervicogenic headaches. This type of headache is one that stems from tension in the cervical muscles, so the study was meant to examine if one method was more effective than the other in removing the tension and therefore reducing the frequency of the headaches. The researchers randomly assigned participants into two groups where one group received dry needling and the other received friction massage. Each group was given three sessions over the course of one week, and were evaluated 48 hours after the last treatment to determine the frequency of the headaches after the treatment. The study found that both methods were effective in reducing the frequency of the headaches, but that neither treatment was more effective than the other.

### Appraisal of the study introduction

The introduction had a detailed explanation on trigger points, such as what they are and how they are identified. The section was written in a clear and logical manner, which made it easy to understand and digest. It is clear that the researchers were passionate on finding a method for treating this type of condition.

While the explanation on trigger points was extensive and well written, there was not much information on the background of either dry needling or friction massage. This makes it difficult for anyone who is not familiar with these modalities to understand the main point of this article. One or two sentences explaining these treatments would have added significant information to the introduction of this article.

### Appraisal of the study methods

This study was conducted as a randomized single-blind study, which makes it credible in terms of its methods. Conducting the study in this manner reduced bias from the subjects, as they were unaware of the group assignments or what method of treatment the other group was receiving.

Although the subjects were randomized, there was not a great deal of diversity within them. The study was conducted with five male and thirty-five female subjects, making the data more skewed towards females. This introduces the possibility of a difference in the results with the genders, so more diversity would have made it a much stronger study.

#### Appraisal of the study results

The results were well structured and answered all relevant questions about the subject. The charts were simple and easy to read, and showed where there were relationships or statistical significance in the data. There was a brief explanation that also put the results into words, so that paired with the data charts made the section very reader-friendly.

Since the explanation of the results was so brief, there was not much information on the clinical significance of the results. This would have added an extra level of significance to the article, and not having the explanation leaves the reader to make the decision for themselves, which may not be ideal. Since the pain threshold variable held the only statistically significant piece of data, it could have been simple to explain the clinical significance along with it.

#### Appraisal of the study discussion

In the discussion, most if not all statements that are made are backed by a citation to the literature. This adds to the credibility of the paper overall, as it shows that this is not just an opinion of the authors and that the information is valid.

While the authors were diligent in citing their sources and backing their information, they were not incredibly forthcoming with showing the limitations to the study. Even though they were in the discussion, the wording made them hard to identify, and therefore made it seem as though they were trying to hide the information from the reader.

## **Discussion**

This study is significant to Physical Therapy because it shows that there are multiple methods with which to treat a patient who is experiencing cervicogenic headaches. This can help the patient reduce the use of NSAIDS or other pain relievers that they may be using to self-treat the symptoms, and can therefore reduce complications from those medications as well. When reflecting on the clinical question of if dry needling can reduce the frequency of cervicogenic headaches in young adults, this study shows that dry needling as well as friction massage were equally effective in reducing both the frequency and intensity of the headaches.

While this article confirms the effectiveness of dry needling for cervicogenic headaches, it also shows that friction massage is equally as effective. From a treatment standpoint, it would typically be safer to choose the friction massage over the dry needling due to it being safer and easier to learn. Dry needling may be dangerous if the clinician is not well trained, since there is a large number of neural and vascular structures in the cervical region that can cause major consequences if the procedure is not performed correctly. The massage may also be a better option if the patient has a fear of needles and would therefore refuse a dry needling treatment. Having the option to use massage and still be able to treat that patient with the same level of care is significant.

In the future, when treating patients, I would consider using either dry needling or friction massage depending on the patient. Since they are equally as effective, I would feel confident in

using either modality if I were trained properly in both dry needling and massage. The massage may be better for the older patients who have less muscle mass, as it may be safer to avoid nerves and vasculature. Dry needling may be a better choice for the patients with a larger area of musculature, or those with smaller points of pain since the needle will be more specific than the massage in targeting the trigger point. Regardless of the modality chosen, this study shows that either will be effective in reducing the frequency and intensity of cervicogenic headaches if performed properly. Even though there was a small sample size, the data showed that it was effective in treating the condition.

Reading this article gave me insight into how there may be multiple ways to treat the same issue. It showed that a certain modality of treatment may or may not be more effective than another, so studying literature may be the most effective method of determining how to treat different conditions. I learned that I as a therapist could potentially have multiple options when it comes to treating a patient, which would help to make the treatment plan more customized to the needs of the patient.

Dry needling is an effective method of treatment for cervicogenic headaches, but so is the use of friction massage based on the article. A clinician is therefore free to choose which modality to use based on the needs of the patient and the level of training of the clinician. This will help the clinician be better able to adapt the treatment for the patient and create an effective and customized plan of care to better help the individual in reducing the frequency of cervicogenic headaches.